US 2: Everett Port/Naval Station to SR 9 Corridor Planning Study

Corridor Working Group Meeting #3

Carol Hunter
WSDOT, Project Manager

Everett Public Works Building
Spada Conference Room
October 21, 2010
10:00 – 11:30

Dave Dye
Deputy Secretary

Paula Hammond
Secretary of Transportation

Steve Reinmuth
Chief of Staff

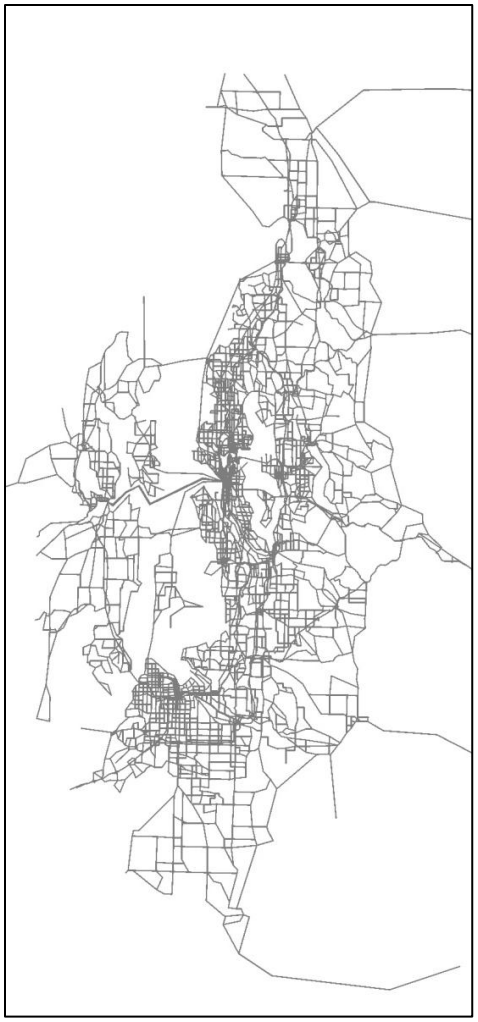
Washington State Department of Transportation

Snohomish County

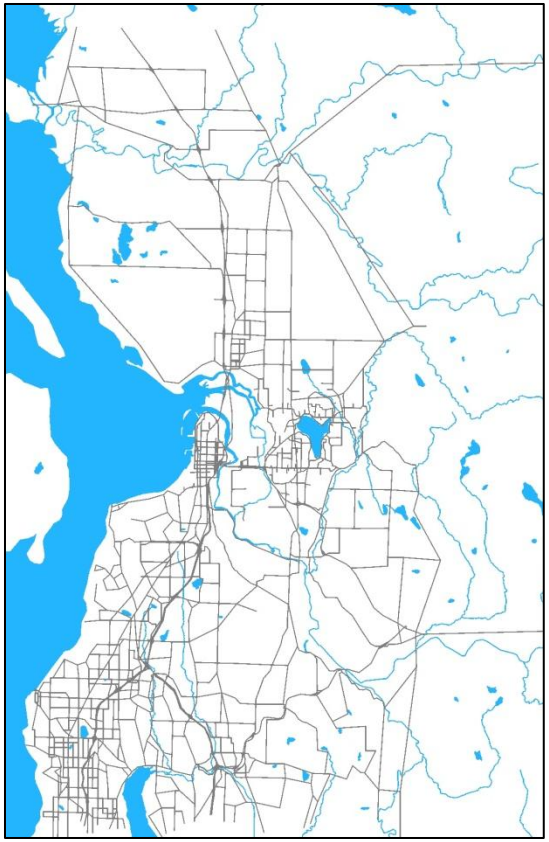
Everett

Modeling Methodology: Subarea Modeling

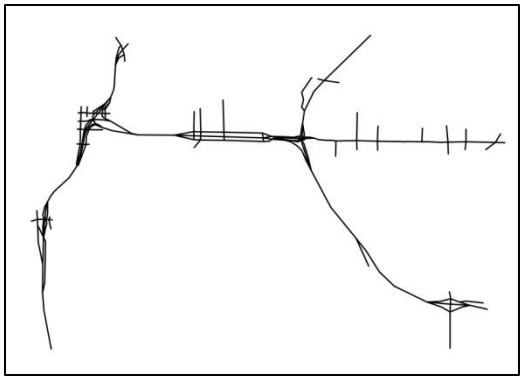
Demand Forecast → Operations Simulation



Step 1: 2040 PSRC Model with updated network and land use inputs



Step 2: Updated Land Use and Zone System for Study Area – more detail added for study area facilities

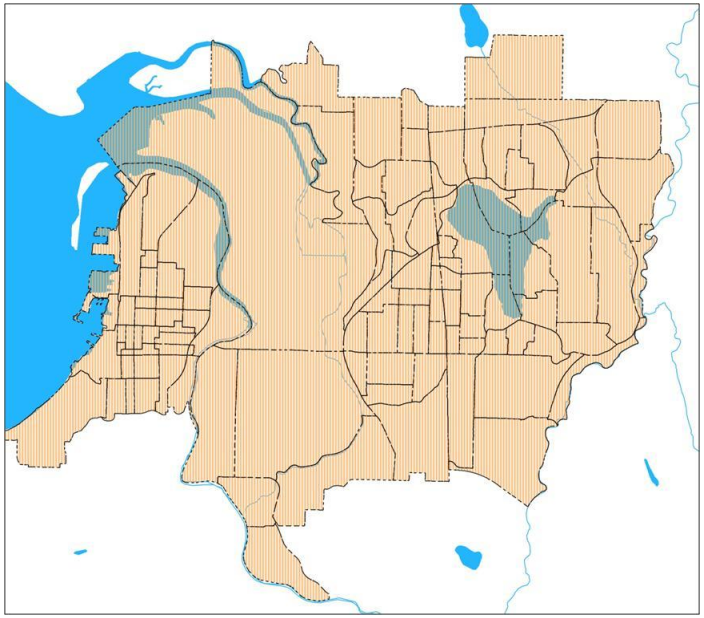


Step 3: Simplified network for microsimulation with final adjustments made to improve AM and PM Peak Hour validation

Modeling Methodology: Overview

Step 2: Subarea modeling process beginning with the PSRC model

- TAZ splitting for the US 2 study area
  - Match Snohomish County TAZ structure in study area
  - Same TAZ structure as PSRC Model for remaining area



- Land Use Adjustments
  - PSRC forecasts for a majority of study area except for
    - Adjustments made for Snohomish Station
    - Adjustments made around 20th Street and SR 9 based on local inputs

- Coding of Key Network assumptions for 2040 Baseline

Modeling Methodology: Land Use Adjustments

PSRC forecasts were adjusted for the City of Snohomish's North Planning Area and Snohomish Station based on input from Technical Review Team.

City of Snohomish North Planning Area - Proposed Land Use Designation				
Land Use	**Acres**	**FAR**	**KSQFT**	**Employees**
Employment				
Business Park	19.3	0.3	252	1,000
Community Center Mixed Use	26.0	0.1	113	190
Regional Commercial	162.2	0.3	2,120	4,230
Office / Medical	29.4	0.35	448	1,790
Total Employees				**7,210**
Housing Units				
	Acres	**Total HH**		
High Density Residential	28.1	190		
Medium Density Residential	9.7	50		
Low Density Residential	24.6	80		
Single Family Residential	134.9	230		

Snohomish Station	
Land Use	
Employment	**Employees**
Retail	**1,120**
Housing Units	
Single Family Units	**112**
Multi Family Units	**82**

* Data was provided by the City of Snohomish

Modeling Methodology: Key Network Changes

All Transportation 2040 projects on all routes except US 2 from I-5 to SR 204:

1. US 2 improvements at Bickford Avenue
2. US 2 widening east to Gold Bar (including Monroe Bypass)
3. Active Traffic Management on I-5 from 145th Street to SR 528
4. I-5 HOV lane expansion from US 2 to SR 528
5. SR 9 expansion (including Sno. River Bridge) as outlined in SR 9 RDP
   - Includes improvements at SR 9 and SR 204
6. SR 522 four-lane widening completion to Monroe

Model Results: System-wide VMT, VHT, & Delay

PSRC Four-County VMT, VHT, and Delay

Measure	2010		2040		% Change	
	AM	PM	AM	PM	AM	PM
VMT	14,788,361	18,716,838	17,833,035	22,809,452	121%	122%
VHT (veh-hrs)	444,854	733,846	649,412	1,335,600	146%	182%
Delay (veh-hrs)	121,743	314,718	254,070	814,756	209%	259%

Subarea VMT, VHT, and Delay

Measure	2010		2040		Difference	
	AM	PM	AM	PM	AM	PM
VMT	3,424,778	4,448,017	4,219,391	5,485,153	123%	123%
VHT (veh-hrs)	86,279	142,210	146,791	258,995	170%	182%
Delay (veh-hrs)	12,907	44,398	53,348	135,539	413%	305%

Subarea Percent of PSRC Total VMT, VHT, and Delay

Measure	2010		2040	
	AM	PM	AM	PM
VMT	23%	24%	24%	24%
VHT (veh-hrs)	19%	19%	23%	19%
Delay (veh-hrs)	11%	14%	21%	17%

Summary of Peak Hour Growth Forecasts

- US 2
  - Trestle demand exceeds capacity in both the AM and PM Peaks, peak hour growth is capacity constrained (approximately 0.7% per year)
  - Growth near Bickford Avenue is estimated to be more than 2.0% per year due to planned growth/adjustments for Snohomish Station
    - Mainline has capacity, but Bickford I/C improvements as planned would be needed
- SR 204
  - Growth rates near 1.0% per year reflect capacity constraint
- 20th Street SE
  - Annual growth rates in excess of 2.5% per year due to planned growth along the corridor (captured in land use adjustments)
- I-5
  - Peak Hour demand north of Marine View Drive is over capacity today and would be worse without improvements (both AM and PM)

- Not much difference in demand between tolled and untolled scenarios

Questions?

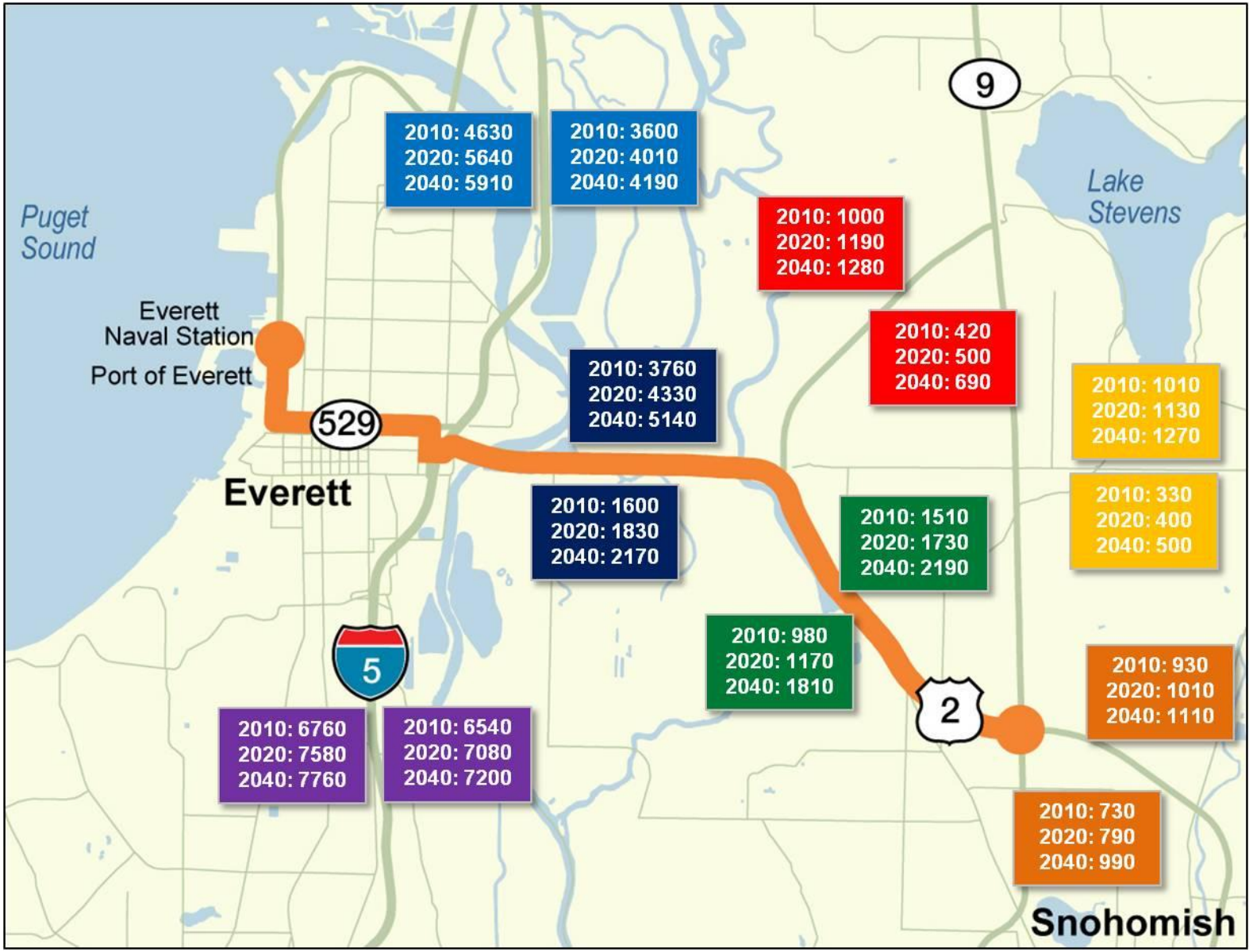
Table 1. Regional Changes in Land Use Assumptions

Year	Total Population	Total Households	Retail Employment	Office Employment	Industrial Employment	Total Employment
2006	3,507,603	1,386,593	337,567	920,532	417,191	1,675,290
2030	4,560,444	1,941,536	443,775	1,449,092	495,475	2,388,342
Absolute Growth	1,052,841	554,943	106,208	528,560	78,284	713,052
% Change	30%	40%	31%	57%	19%	43%

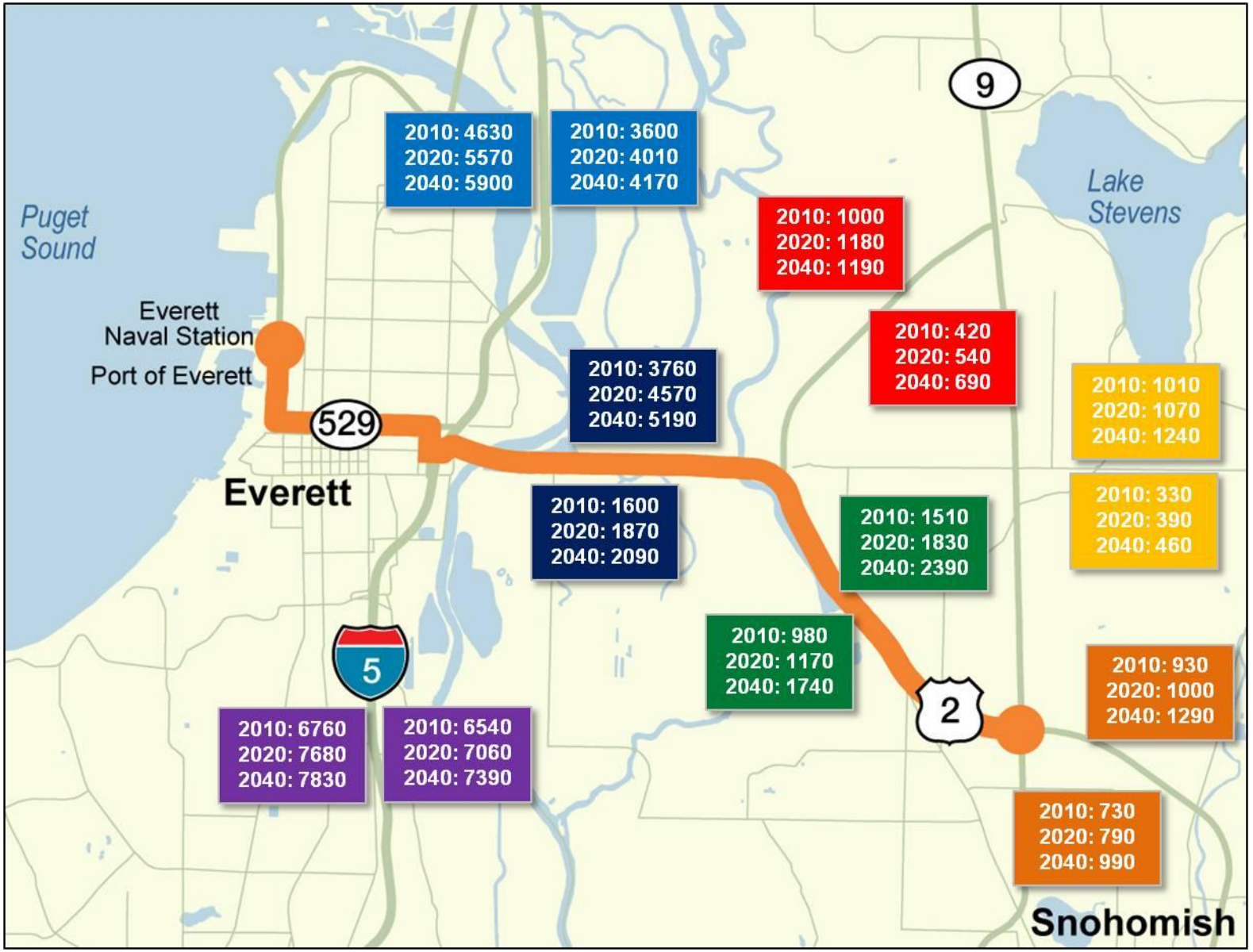
Table 2. Study Area Changes in Land Use Assumptions

Year	**Total Population**	**Total Households**	**Retail Employment**	**Office Employment**	**Industrial Employment**	**Total Employment**
2006	**75,696**	**27,982**	**4,175**	**15,299**	**5,446**	**24,920**
2030	**118,540**	**47,566**	**9,102**	**26,741**	**9,590**	**45,433**
Absolute Growth	**42,844**	**19,584**	**4,927**	**11,442**	**4,144**	**20,513**
% Change	**57%**	**70%**	**118%**	**75%**	**76%**	**82%**

Draft Results: Baseline without Tolls: 7am to 8am

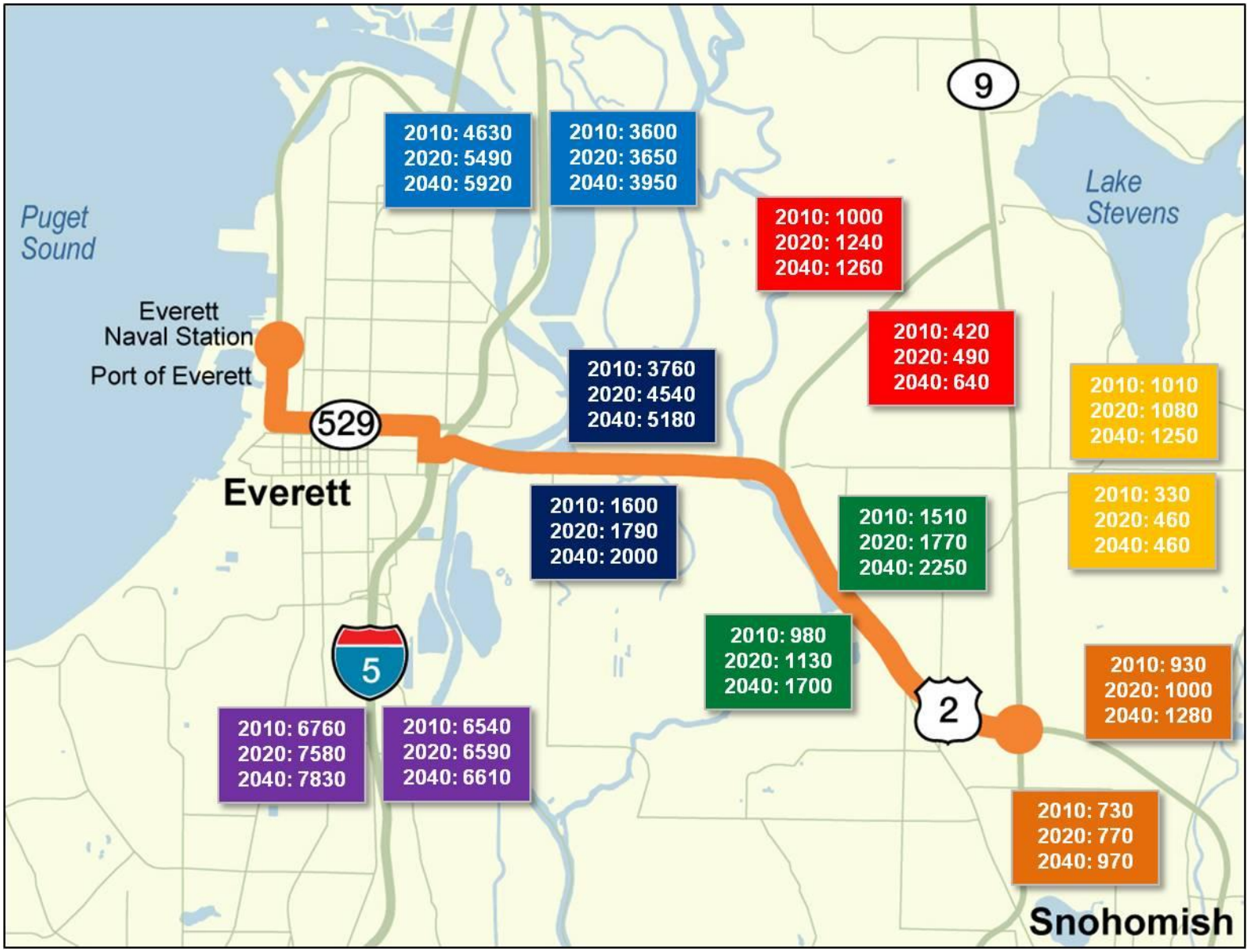


Draft Results: Build without Tolls: 7am to 8am

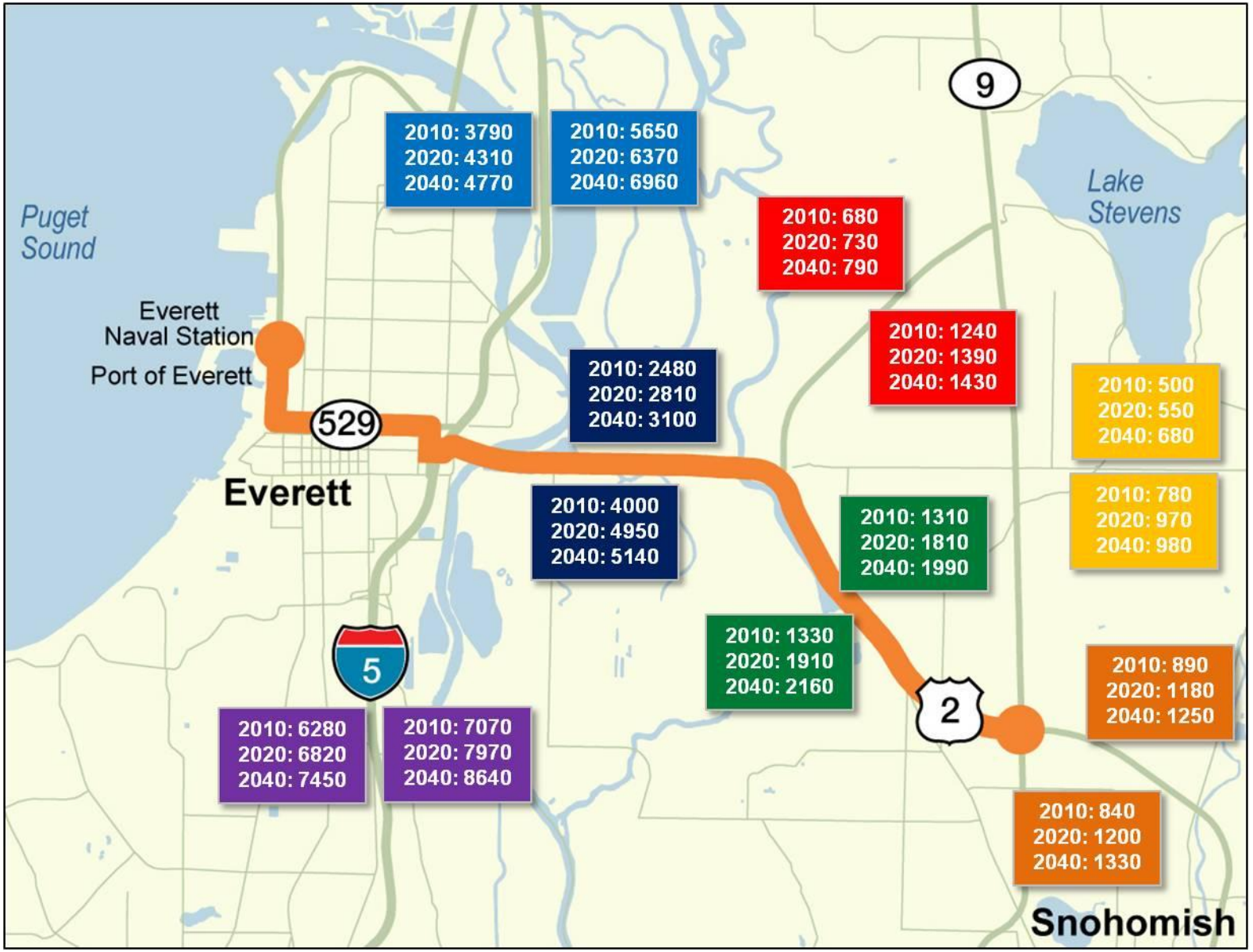


Draft Results: Build with Freeways Tolled: 7am to 8am

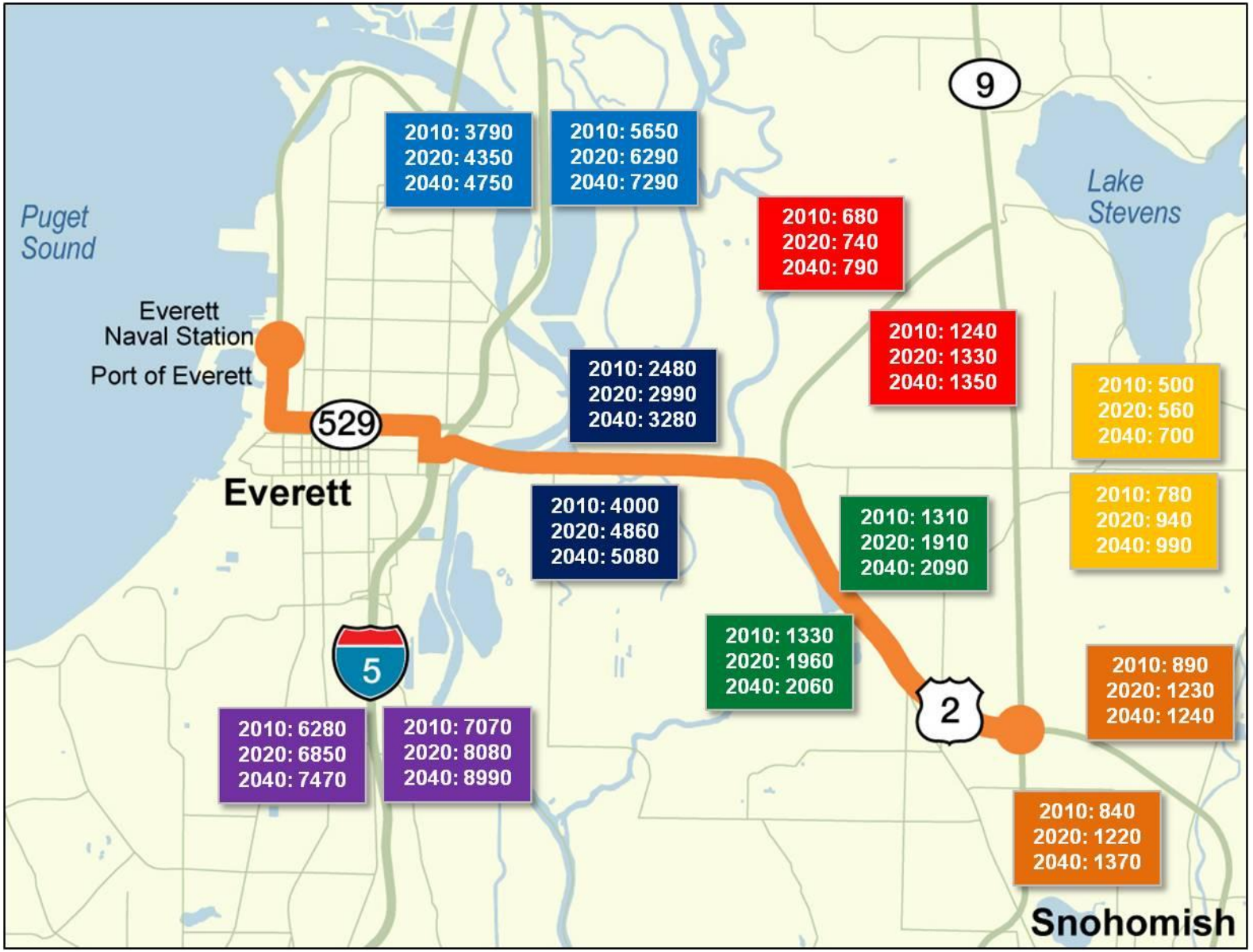
(Consistent with PSRC's assumption of 20 cents per mile in the am peak period)



Draft Results: Baseline without Tolls: 5pm to 6pm



Draft Results: Build without Tolls: 5pm to 6pm



Draft Results: Build with Freeways Tolled: 5pm to 6pm

(Consistent with PSRC's assumption of 30 cents per mile in the pm peak period)